

# Software Defined Everything

Management, Clouds, Containers, and Storage

**Pete Chadwick**

Senior Product Manager  
pchadwick@suse.com

**Joachim Werner**

Senior Product Manager  
joe@suse.com



# Data Center History - 1970s

- One (big) Server
- 100s of users
- Limited Virtualization



"IBM System360 Model 30" by Dave Ross - Flickr: IBM System/360 Model 30.  
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# Data Center History - 2000s



- Scale up servers
- 1000s of users
- 100s of VMs

# Data Center History - Now



- Scale out servers
- Millions of users
- 10,000s of images
- No increase in staff

**Scale drives new approaches**

**45%**

**Innovation**

**58%**

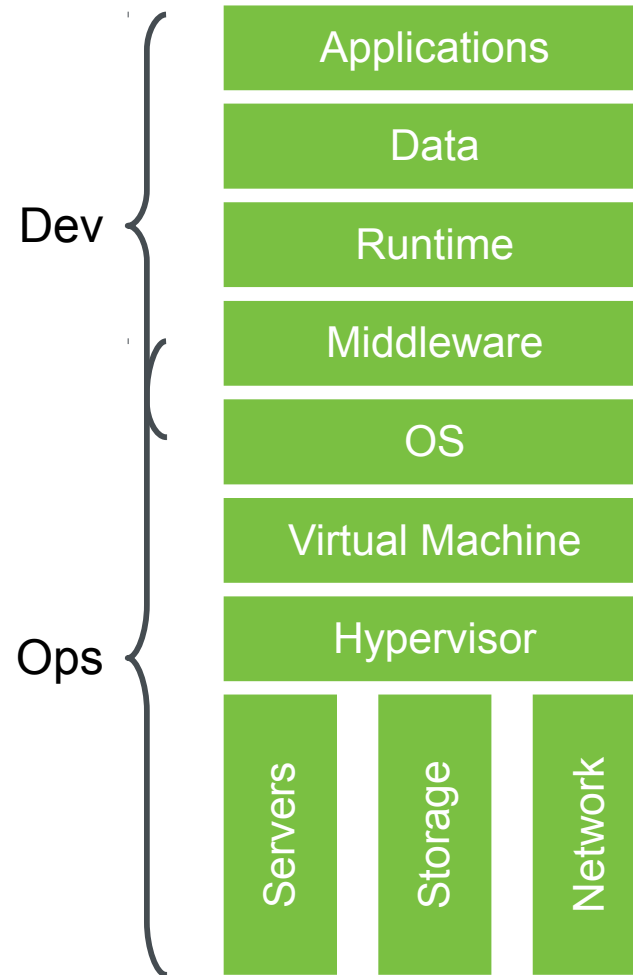
**Agility**

**88%**

**Containers are the Future**



# Traditional data center organization



# Because

I want change



Dev

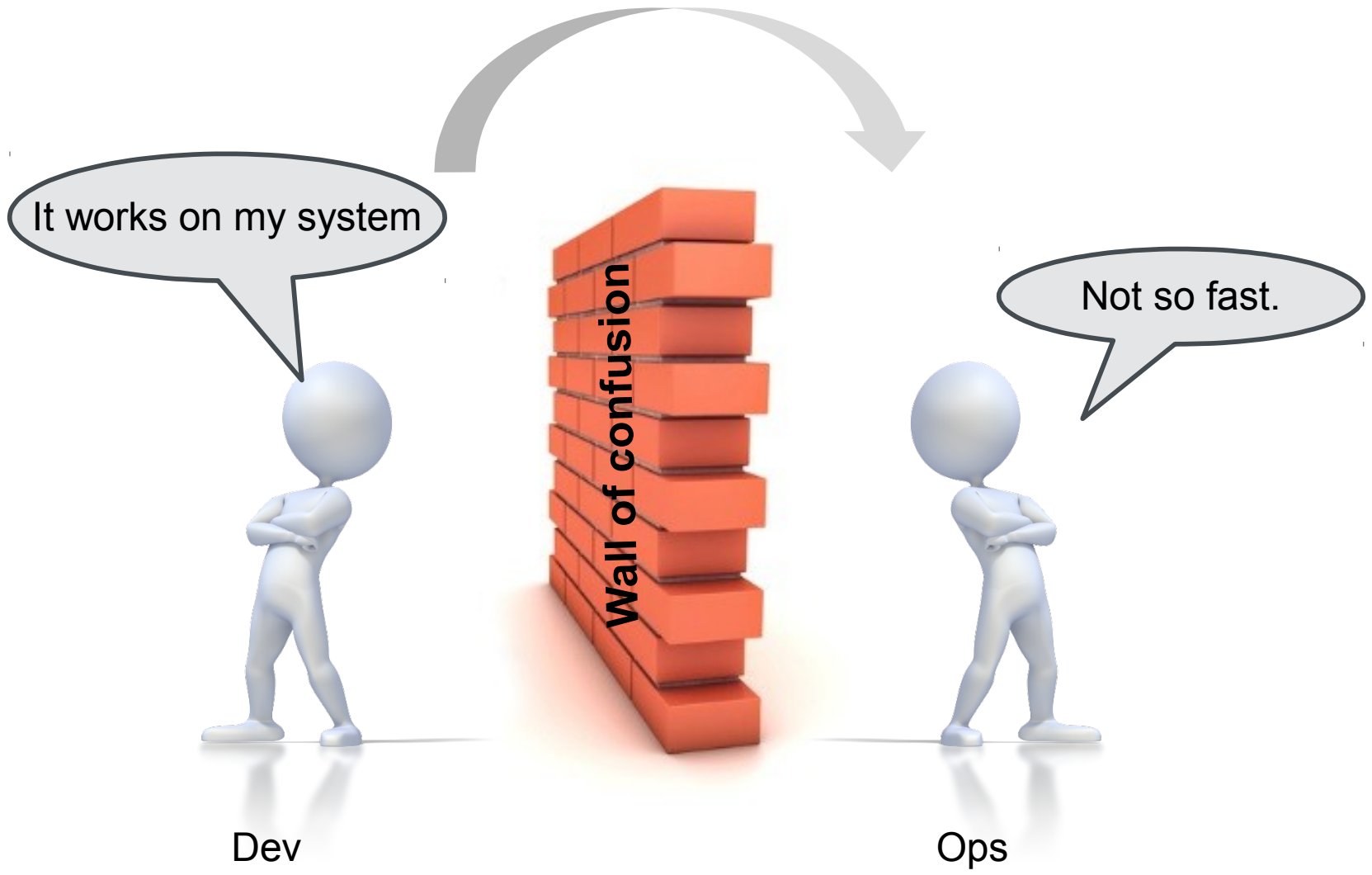


I need stability



Ops

# Leads to

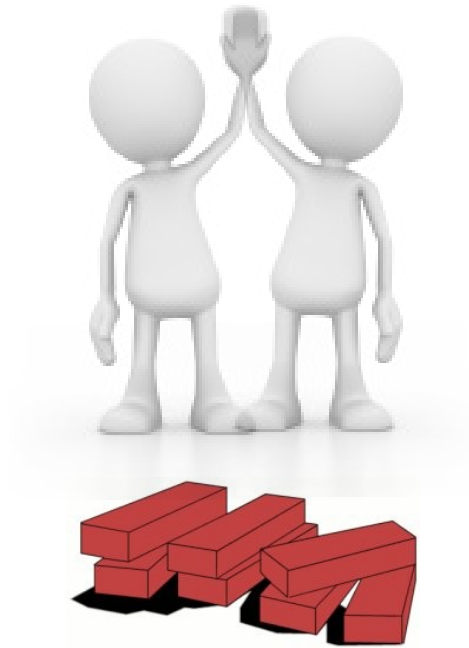




# DevOps Model

- Infrastructure as code
  - Orchestrate the creation and deployment of images
  - Manifests describe images and workloads
  - Fully virtualized infrastructure
- Microservices
  - Provision services instead of servers
- Containerization
  - Build once
  - Deploy often and anywhere

# Result



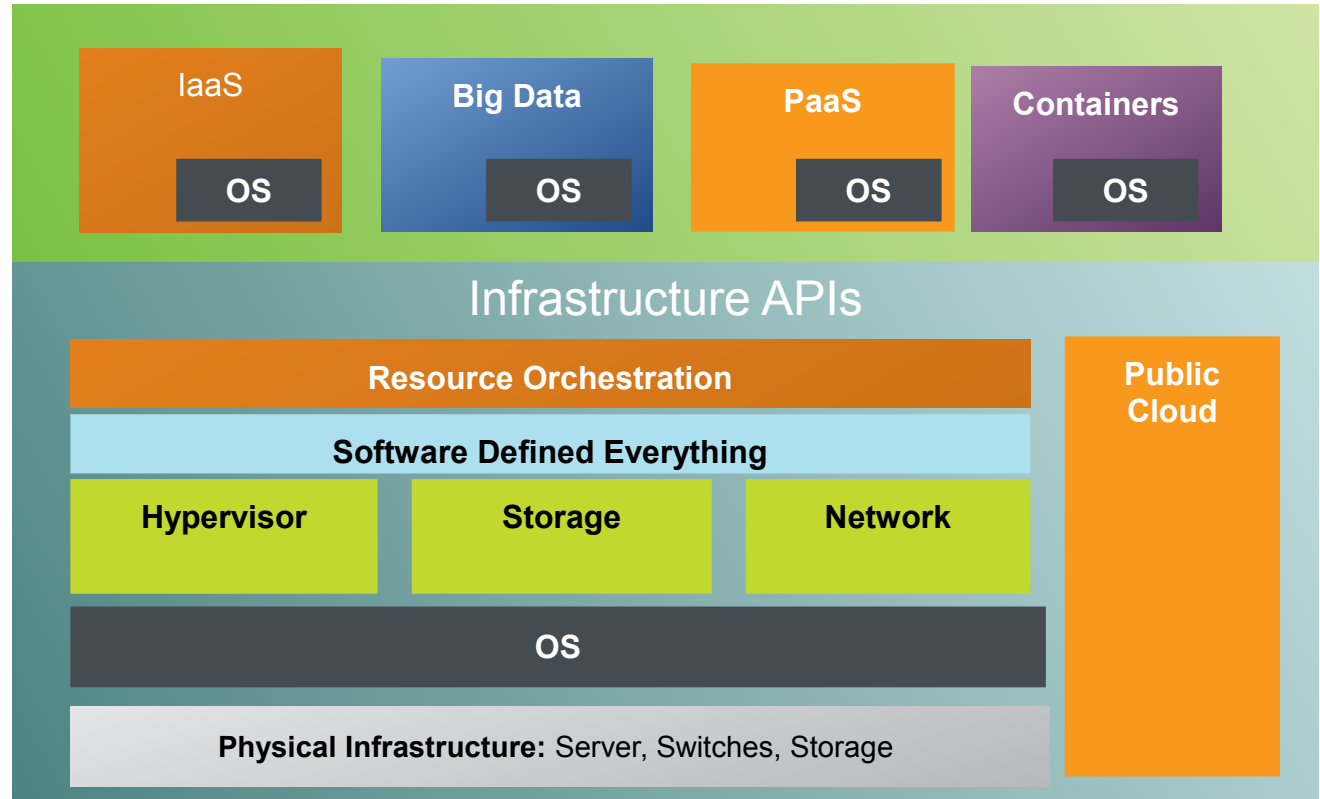
**But, DevOps drives a new infrastructure**

# SUSE and DevOps

# Emerging Infrastructure

## Management

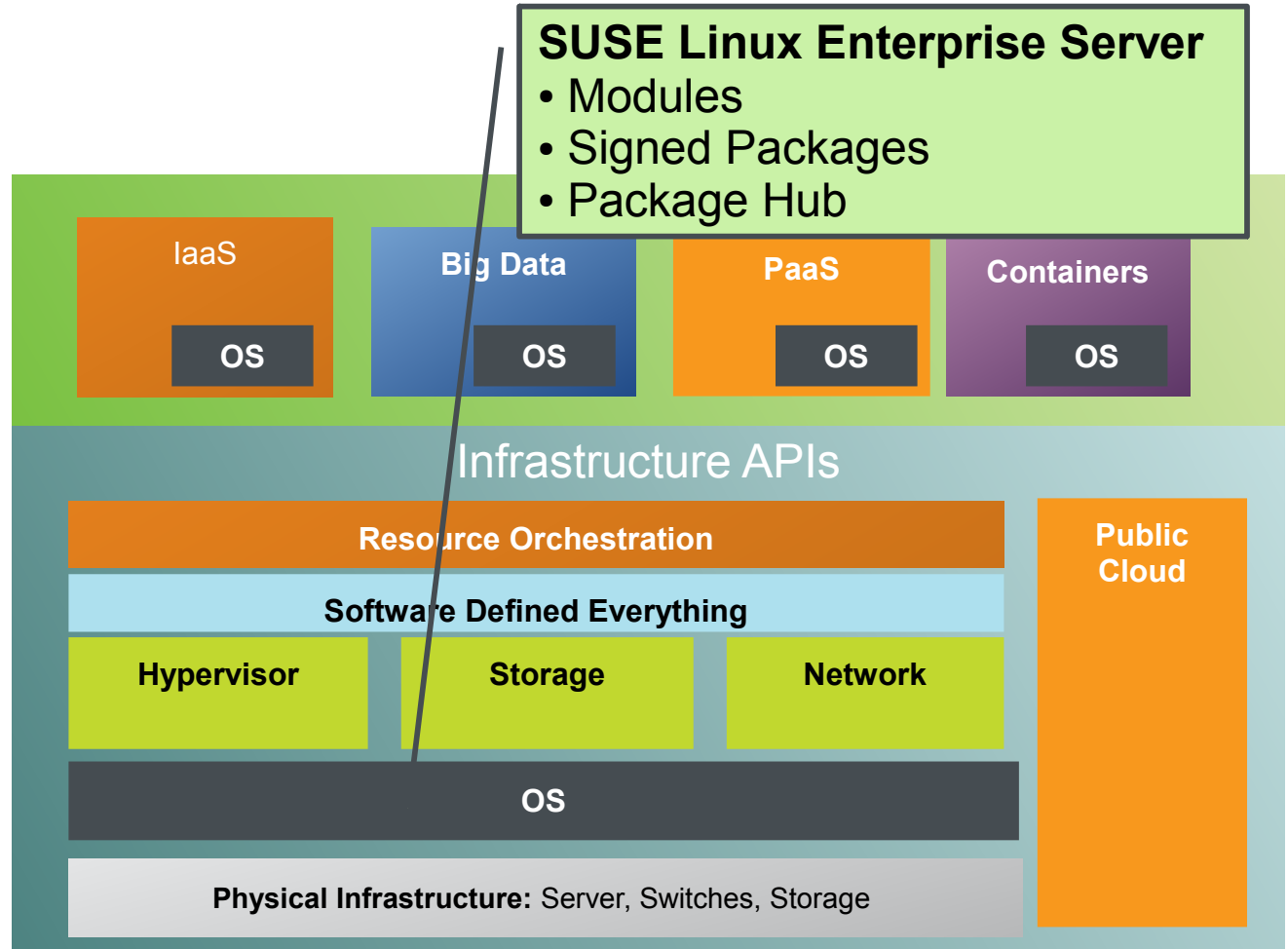
- Monitoring
- Patching
- Image Creation
- Configuration Management
- Orchestration



# SUSE Solutions

## Management

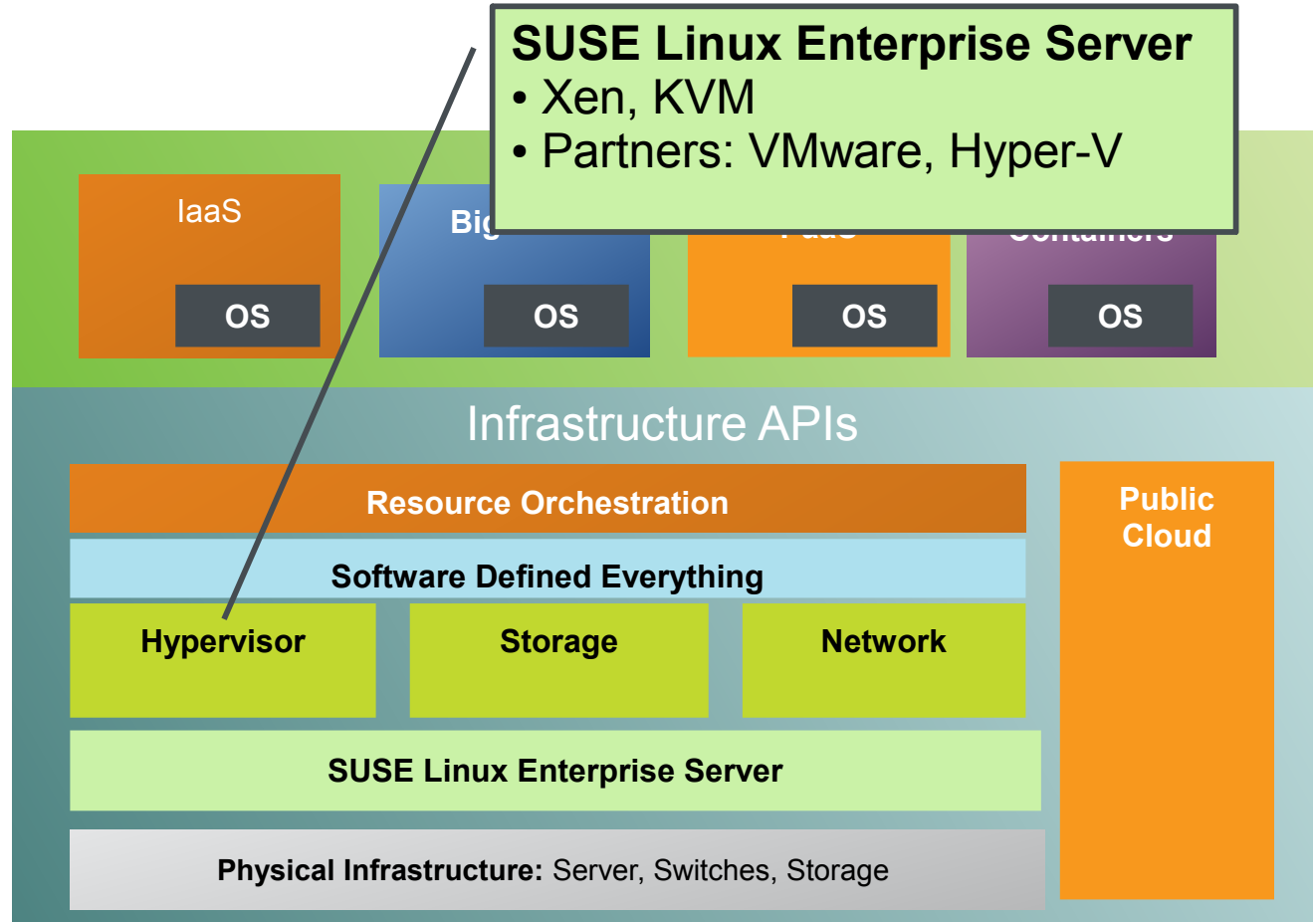
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# SUSE Solutions

## Management

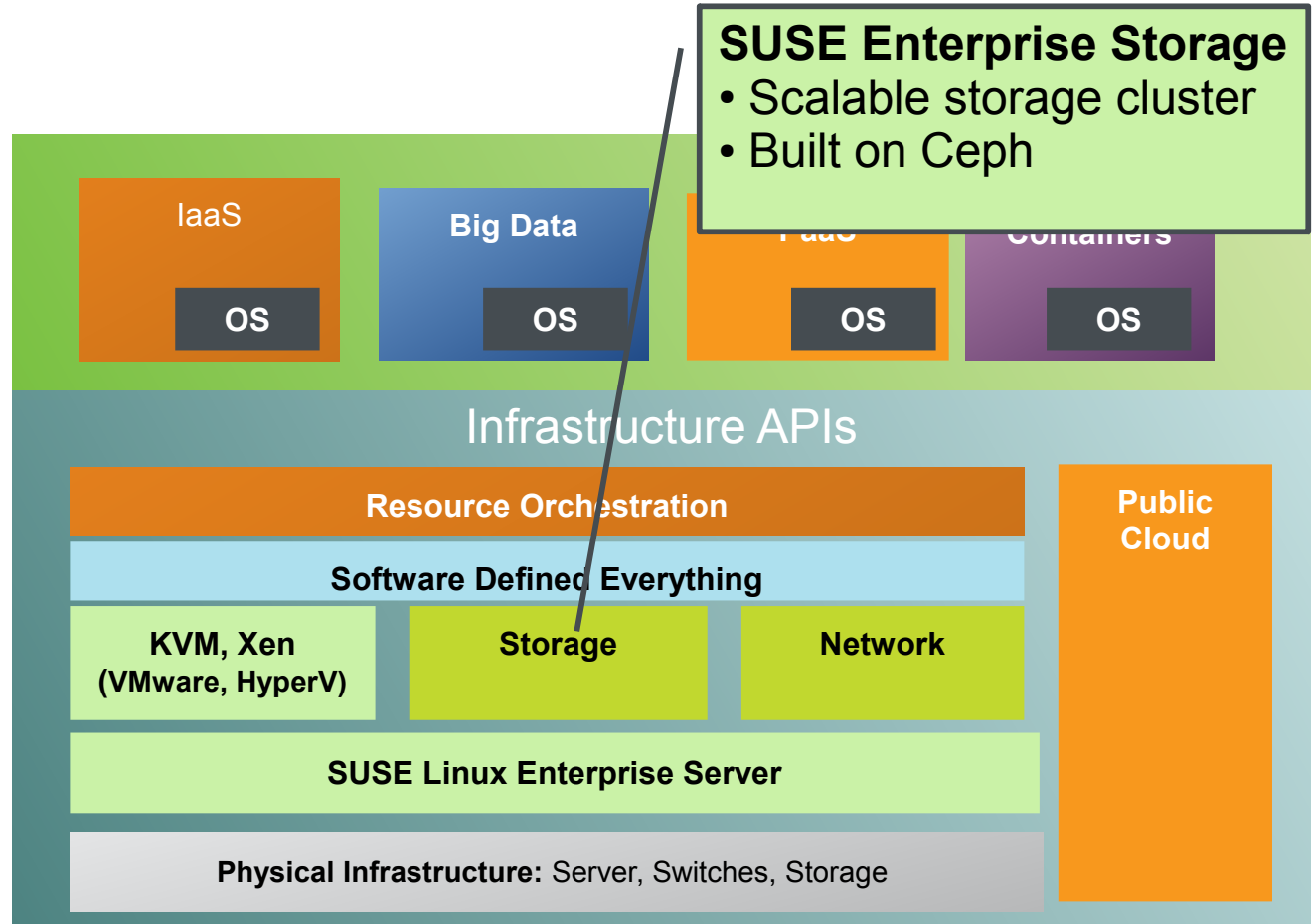
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# SUSE Solutions

## Management

- Monitoring
- Patching
- Image Creation
- Configuration Management
- Orchestration



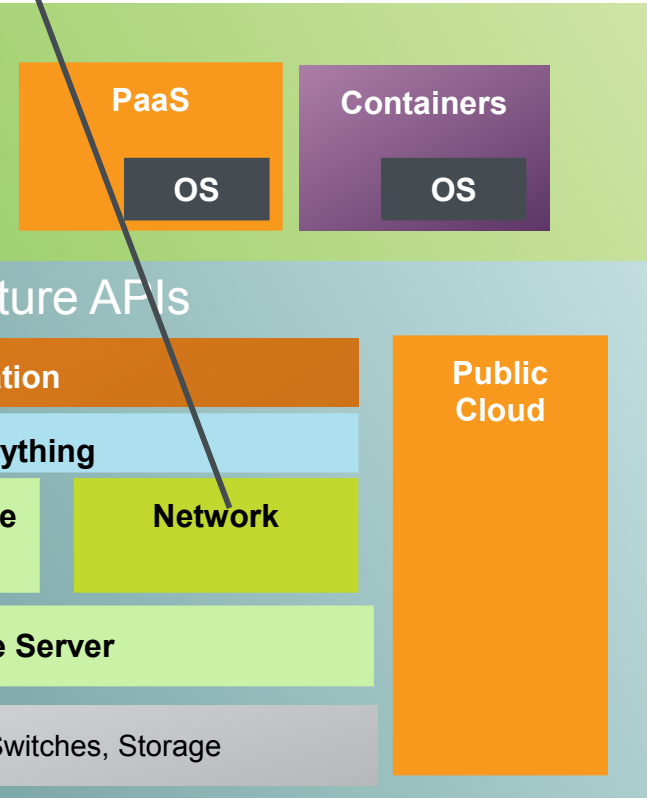
# SUSE Solutions

## SUSE Linux Enterprise Server

- Open vSwitch
- Future:
  - Open Virtual Network
  - IOvisor
- Partners (Plumgrid, Midokura, Contrail, ..)

### Management

- Monitoring
- Patching
- Image Creation
- Configuration Management
- Orchestration



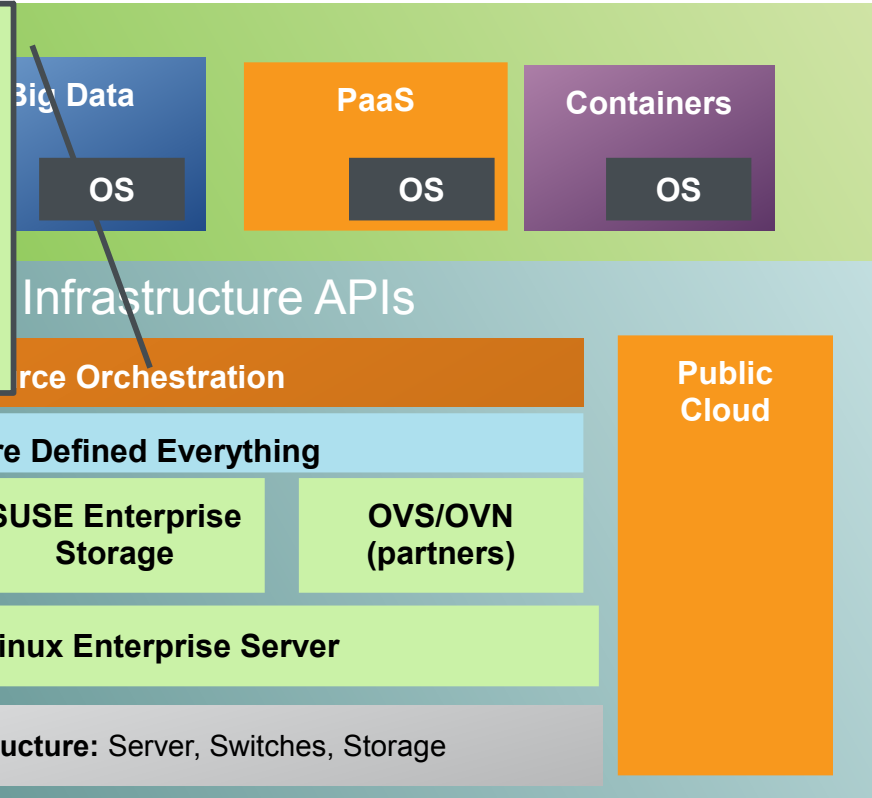


# SUSE Solutions

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## SUSE OpenStack Cloud

- Based on leading open source cloud solution
- Supports OpenStack and EC2 APIs
- Integrated with SUSE Linux and underlying SDx offerings



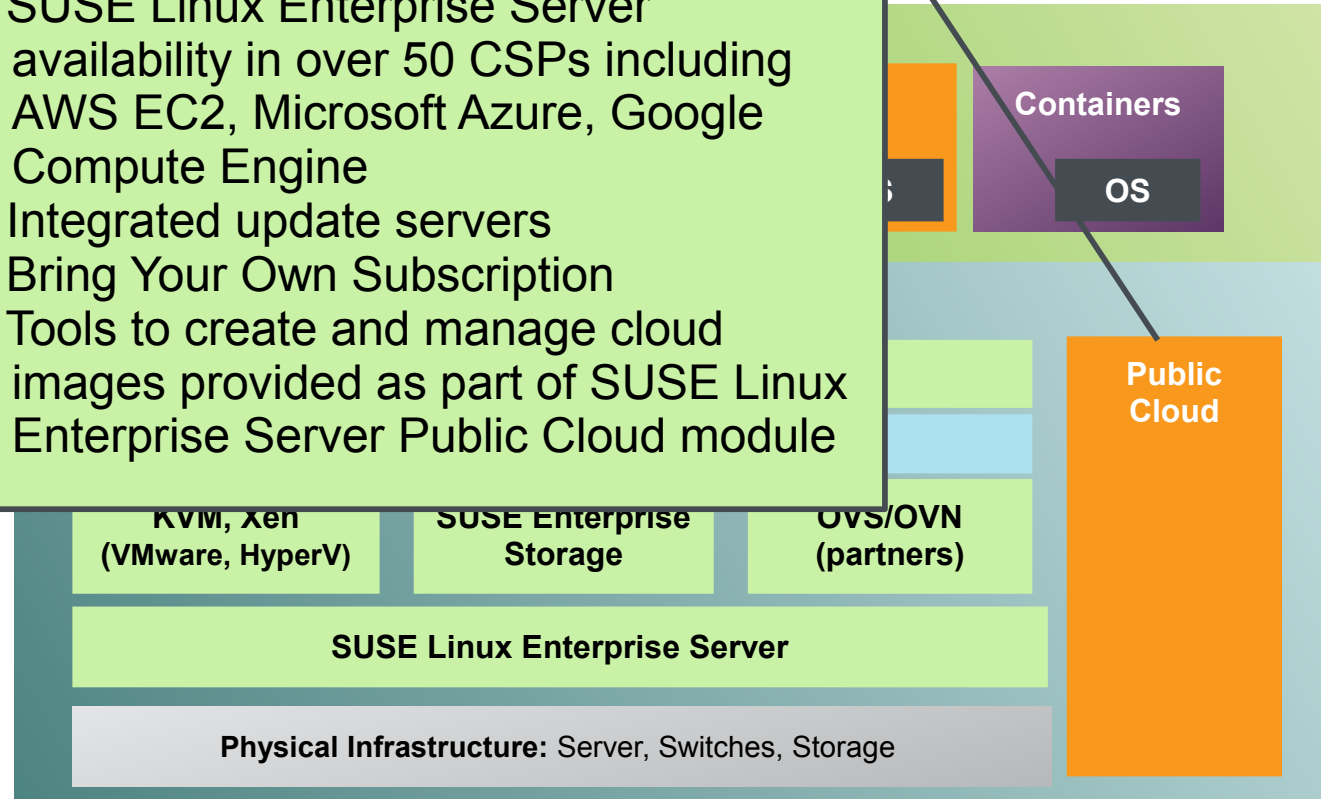
# SUSE Solutions

## Management

- Monitoring
- Patching
- Image Creation
- Configuration Management
- Orchestration

## SUSE Cloud Service Provider Program

- SUSE Linux Enterprise Server availability in over 50 CSPs including AWS EC2, Microsoft Azure, Google Compute Engine
- Integrated update servers
- Bring Your Own Subscription
- Tools to create and manage cloud images provided as part of SUSE Linux Enterprise Server Public Cloud module



# SUSE Solutions

## SUSE Linux Enterprise Server

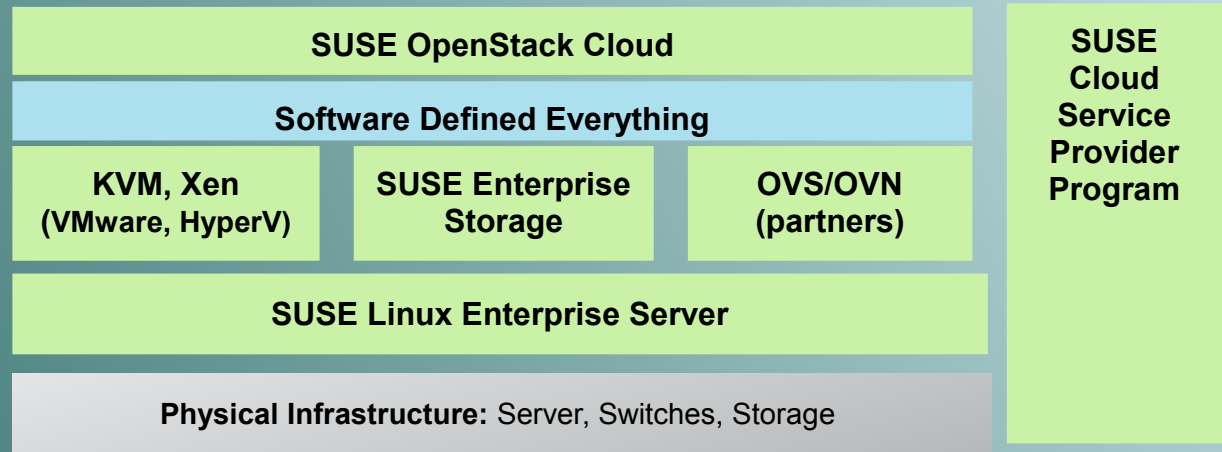
- Integrated support for hosting LXC and Docker
- Just Enough Operating System for optimized container images
- Future - Orchestration

### Manage

- Monitoring
- Patching
- Image Creation
- Configuration Management
- Orchestration



## Infrastructure APIs



# SUSE Solutions

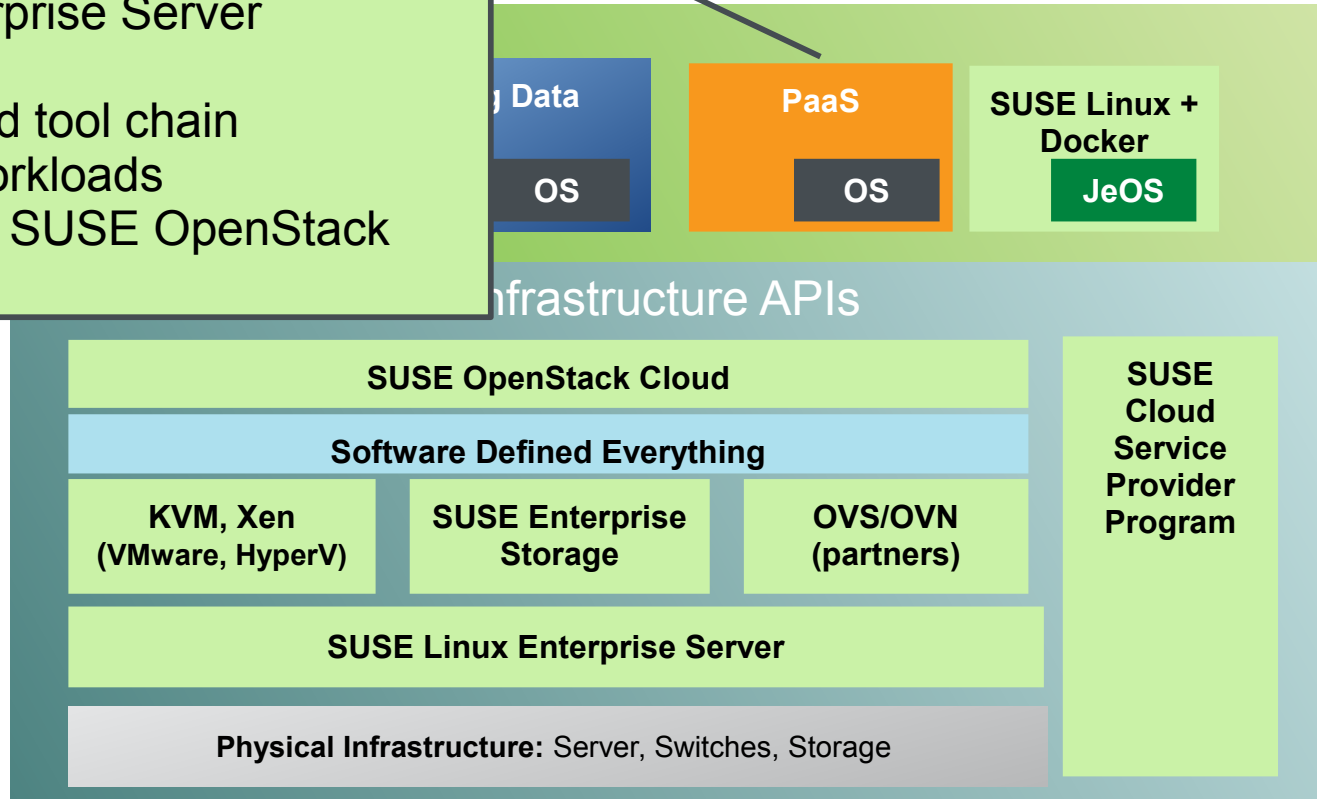
## Cloud Foundry Integration

- Pivotal support for Cloud Foundry on SUSE Linux Enterprise Server
- Future:
  - SUSE optimized tool chain
  - JeOS based workloads
  - Integration with SUSE OpenStack Cloud

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## Management

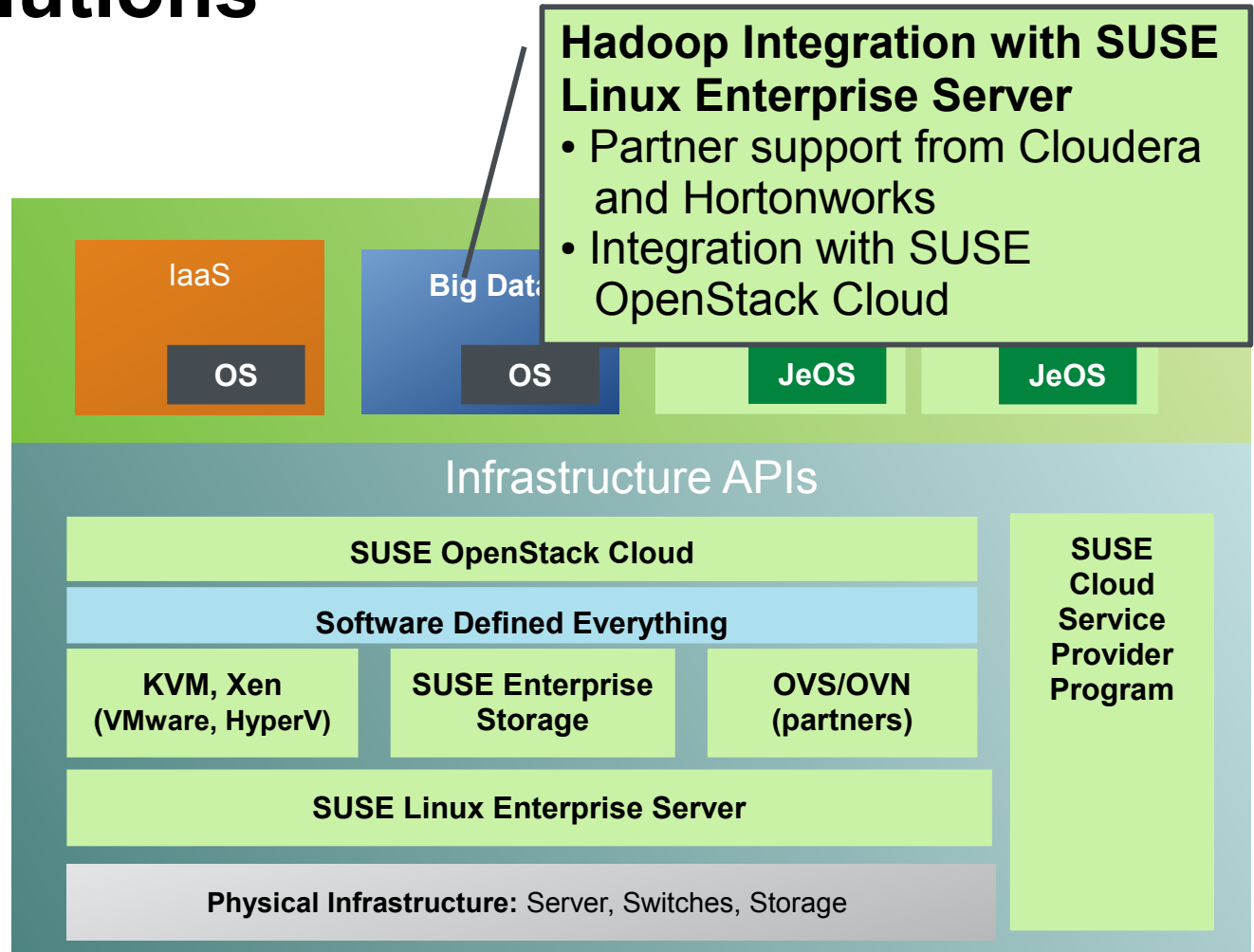
- Orchestration



# SUSE Solutions

## Management

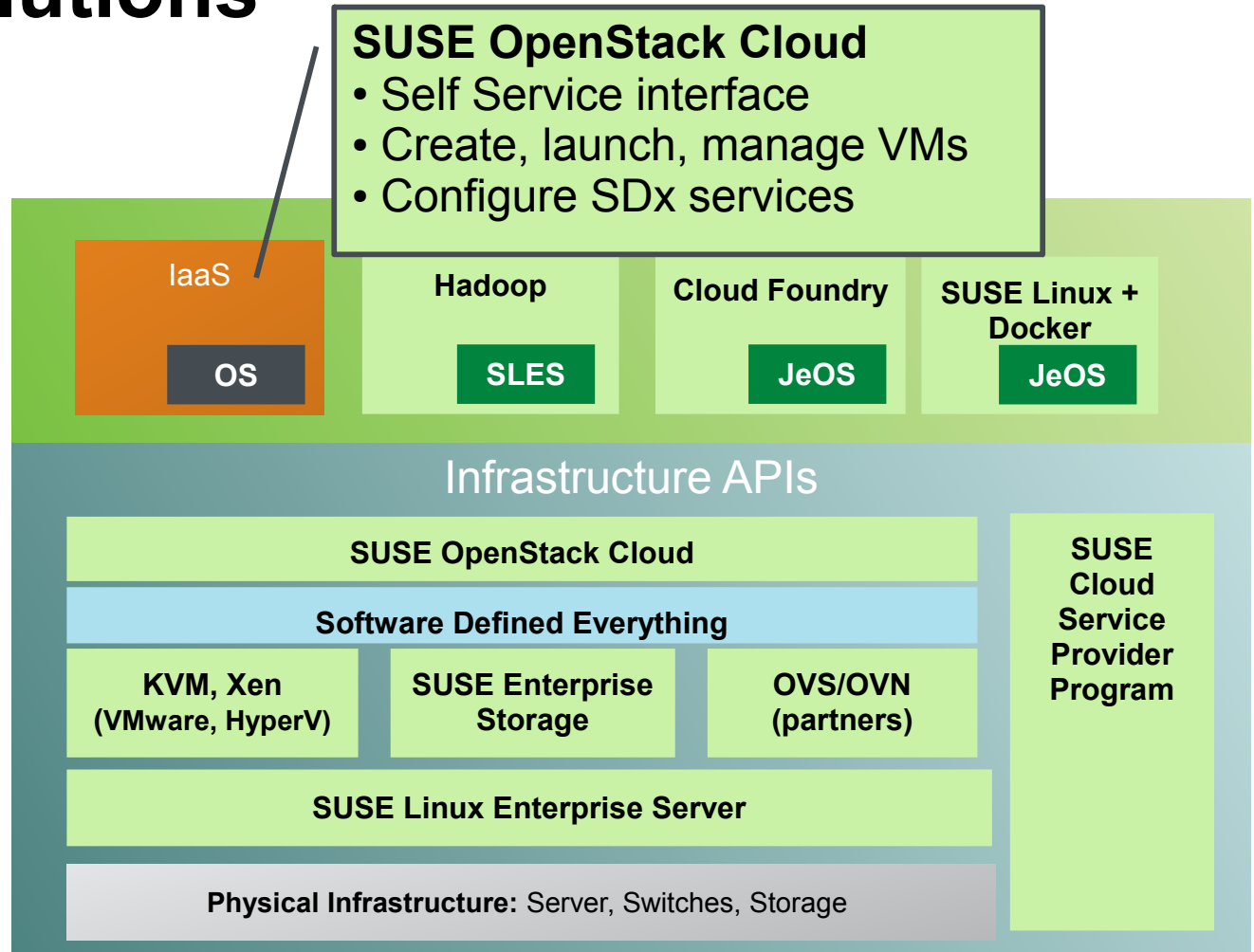
- Monitoring
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# SUSE Solutions

## Management

- Monitoring
- Patching
- Image Creation
- Configuration Management
- Orchestration



# SUSE Solutions

## SUSE Manager

- Lifecycle management of servers, VMs and containers
- Supports images across private and public clouds

## Management

- Monitoring
- Patching
- Image Creation
- Configuration Management
- Orchestration

Cloud Foundry

JeOS

SUSE Linux +  
Docker

JeOS

## Infrastructure APIs

SUSE OpenStack Cloud

Software Defined Everything

KVM, Xen  
(VMware, HyperV)

SUSE Enterprise  
Storage

OVS/OVN  
(partners)

SUSE  
Cloud  
Service  
Provider  
Program

SUSE Linux Enterprise Server

Physical Infrastructure: Server, Switches, Storage

# SUSE Solutions

## Management

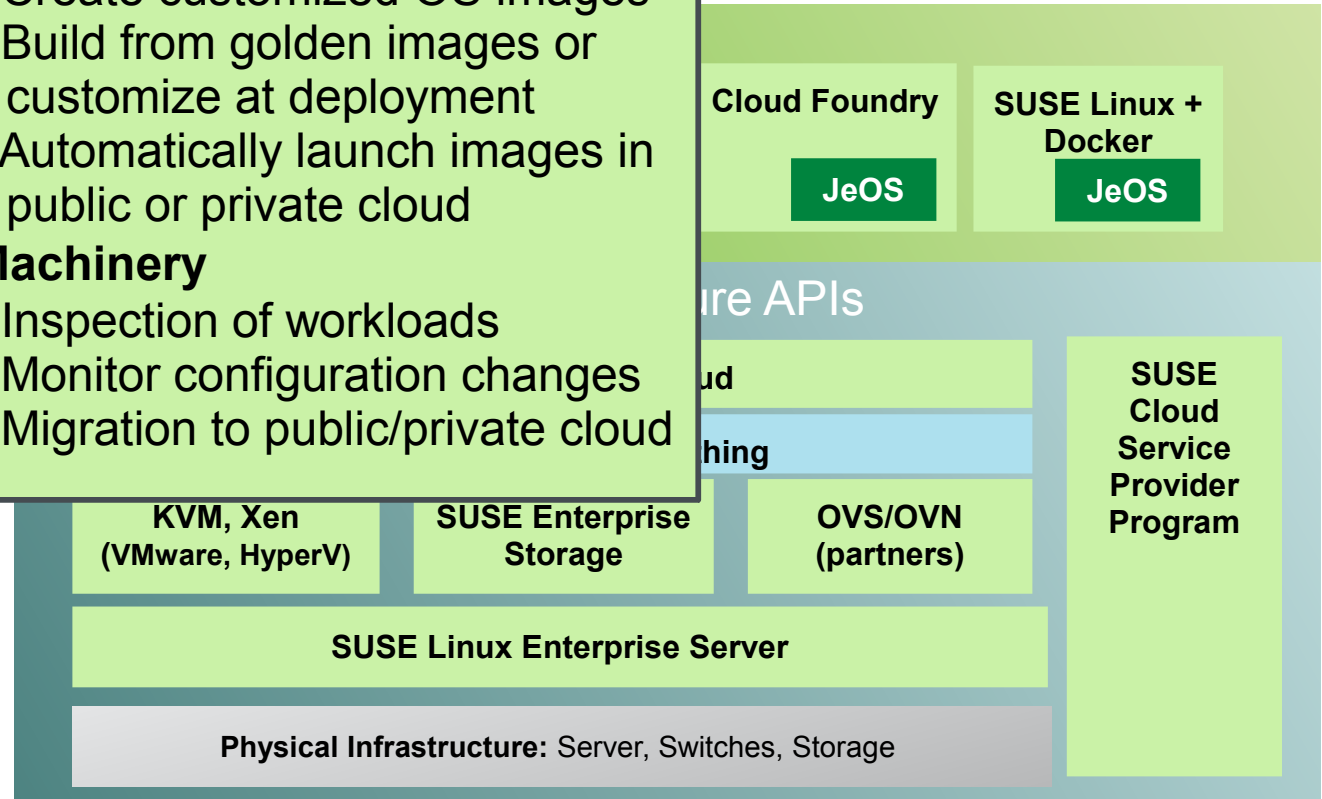
- SUSE Manager
- Image Creation
- Configuration Management
- Orchestration

## SUSE Studio and Kiwi

- Create customized OS images
- Build from golden images or customize at deployment
- Automatically launch images in public or private cloud

## Machinery

- Inspection of workloads
- Monitor configuration changes
- Migration to public/private cloud





# SUSE Solutions

## Management

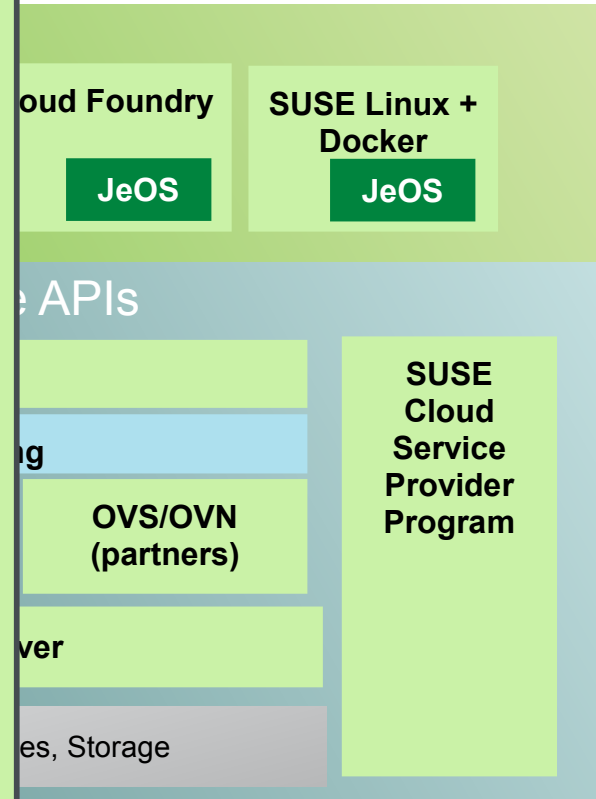
- SUSE Manager
- SUSE Studio
- Kiwi
- Machinery
- Configuration Management
- Orchestration

## Configuration Management

- CFEngine and Puppet supported in Advanced Systems Management module
- Future:
  - SaltStack integration with SUSE Manager
  - Realtime configuration management

## SUSE OpenStack Cloud

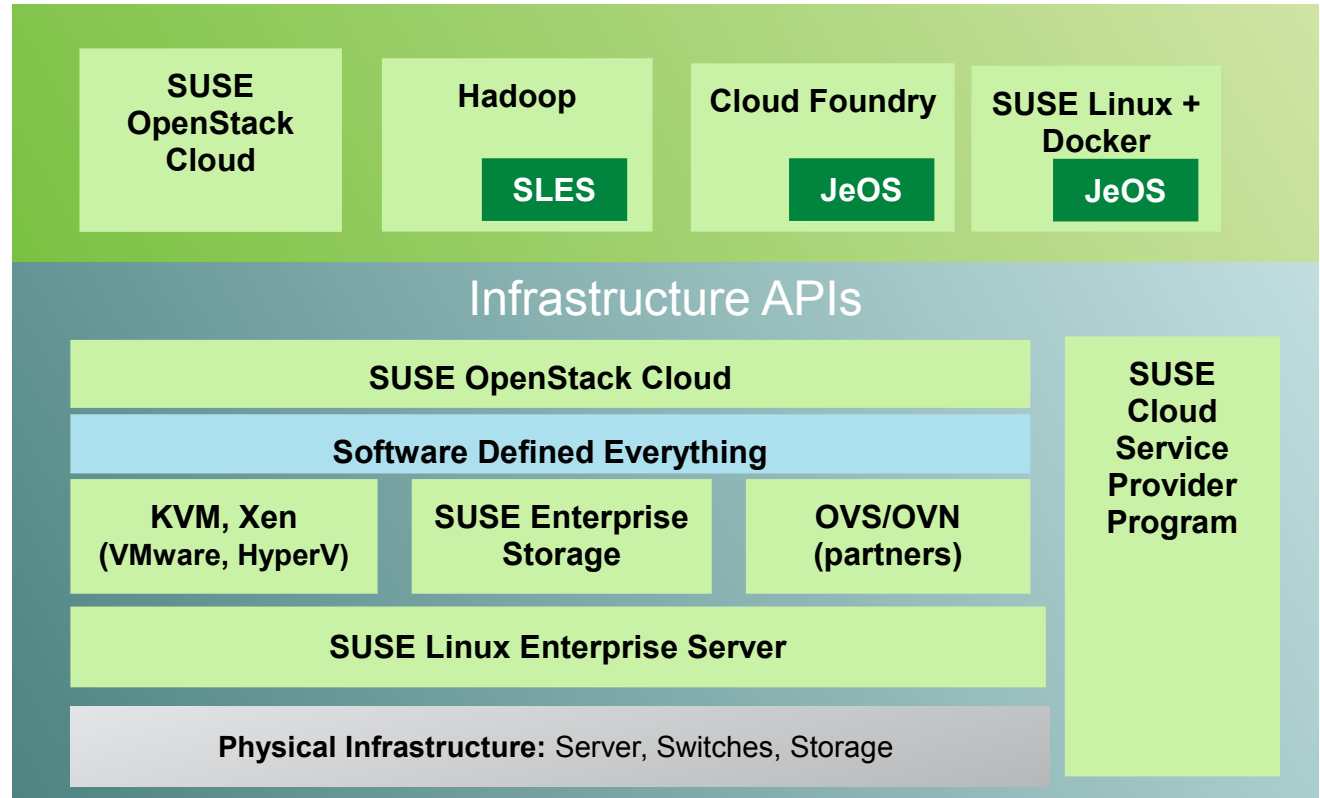
- Administration of physical cloud infrastructure
  - Automated configuration of cloud servers
  - Allocation of cloud services



# SUSE Portfolio for the Future

## Management

- SUSE Manager
- SUSE Studio
- Kiwi
- Machinery
- SaltStack
- SUSE OpenStack Cloud



# Session Recommendations @SUSECon

- FUT19146: Advanced Systems Management with Machinery
- FUT20721: SUSE Manager Roadmap
- FUT20731: SUSE Linux Enterprise Technology Roadmap
- HO20098: Install and Configure SMT and SUSE Manager for Dummies
- TUT18400: Architecting your SUSE Manager Deployment
- TUT19312: The SUSE Build Story
- TUT20514: SaltStack and SUSE



Questions?

Thank you.





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